

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-11 (canceled)

Claim 12 (currently amended): A method of culture of embryonic stem (ES) cells comprising: ES cells comprising maintaining a culture of ES cells in the presence of a synergistic combination of:

- (a) a first compound that activates gp130 and promotes propagation ~~or survival~~ of ES cells; and
- (b) a second compound, which is different from the first compound and that is an inhibitor of MEK and inhibits propagation ~~or survival~~ of cells other than ES cells.

Claim 13 (canceled)

Claim 14 (currently amended): The method of ~~A method according to~~ Claim 12 wherein the second compound is selected from the group consisting of: PD098059 and U0126 ~~selectively inhibits a signaling pathway essential to propagation or survival of cells other than ES cells.~~

Claim 15 (canceled)

Claim 16 (currently amended): The method of ~~A method according to~~ Claim 12 wherein the first compound is a cytokine that activates ~~the cytokine receptor~~ gp130 in ES cells.

Claim 17 (currently amended): The method of ~~A method according to~~ Claim 12, wherein the first compound is LIF.

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Claims 18-24 (canceled)

Claim 25 (currently amended): A culture medium for culture of ES cells comprising a first compound that activates gp130 ~~promotes proliferation of ES cells and~~ a second compound, which is different from the first compound and inhibits MEK that ~~enhances the response of the ES cells to the first compound.~~

Claims 26-30 (canceled)

Claim 31 (currently amended): The culture medium of Claim 25 ~~A culture medium according to Claim 28~~, wherein the second compound is selected from the group consisting of: PD098059 and U0126 ~~compounds which inhibit activity of the enzyme SHP-2; compounds that inhibit the ras/MAPK cascade; compounds that inhibit MEK; compounds that inhibit a mitogen activated protein kinase; and compounds that inhibit cyclin dependent entry into S phase of non-ES cells.~~

Claim 32 (currently amended): The culture medium of Claim 25 ~~A culture medium according to Claim 28~~, wherein the first compound is a cytokine that activates ~~the cytokine receptor gp130 in ES cells.~~

Claim 33 (currently amended): The culture medium of Claim 25 ~~A culture medium according to Claim 28~~, wherein the first compound is LIF.

Claim 34 (currently amended): A method of deriving ES cells comprising: (i) isolating cells from an embryo or embryoid body; (ii) maintaining ~~and maintaining a culture of those isolated cells in the presence of: (a) a first compound that activates gp130 and (b) a second compound, which is different from the first compound and inhibits MEK that selectively inhibits propagation or survival of cells other than ES cells;~~ (iii) dissociating the cells obtained from (ii); and (iv) maintaining dissociated cells

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obtained from (iii) in culture in the presence of: (a) a third compound that activates gp130 and (b) a fourth compound, which is different from the third compound and inhibits MEK.

Claim 35 (canceled)

Claim 36 (currently amended): The method of ~~A method according to~~ Claim 34 comprising developing an embryo in vivo, harvesting the embryo prior to pro-amniotic cavity formation and isolating cells therefrom.

Claim 37 (currently amended): A method of deriving ES cells comprising: (i) developing an embryo in vitro; (ii) isolating in vitro, isolating cells from the inner cell mass of the embryo; (iii) maintaining those isolated and maintaining those cells in the presence of a compound that inhibits MEK; selectively inhibits propagation or survival of cells other than ES cells (iv) dissociating the cells obtained in (iii); and (v) maintaining dissociated cells from (iii) in culture in the presence of a compound that inhibits MEK.

Claim 38 (currently amended): The method of ~~A method according to~~ Claim 37 wherein the MEK inhibitor is PD098059 or U0126 ~~comprising removing primitive endoderm prior to culture in the presence of the compound.~~

Claim 39 (currently amended): The method of ~~A method according to~~ Claim 34, wherein the second ~~compound that selectively inhibits propagation or survival of cells other than ES cells~~ is selected from the group consisting of: PD098059 and U0126 ~~compounds which inhibit activity of the enzyme SHP-2; compounds that inhibit the ras/MAPK cascade; compounds that inhibit MEK; compounds that inhibit a mitogen-activated protein kinase; and compounds that inhibit cyclin dependent entry into S-phase of non-ES cells.~~

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Claims 40-42 (canceled)

Claim 43 (currently amended): A method of culture of ES cells, comprising expressing in the ES cells a compound that inhibits MEK ~~which selectively promotes self-renewal of the ES cells, inhibits propagation or survival of cells other than ES cells, or both promotes self-renewal of the ES cells and inhibits propagation or survival of cells other than ES cells.~~

Claim 44 (currently amended): The method of ~~A method according to~~ Claim 43, comprising expressing a MAP kinase phosphatase in an ES cell.

Claims 45-48 (canceled)

Claim 49 (currently amended): The method of ~~A method according to~~ Claim 34 wherein the compound that selectively inhibits MEK ~~propagation or survival of cells other than ES cells~~ is PD098059.

Claim 50 (currently amended): The method of ~~A method according to~~ Claim 12 wherein the first compound is LIF and is at a concentration of 5 Units per milliliter (U/ml).

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